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EXAMINER

THOMPSON, TIMOTHY J

ART UNIT

PAPER NUMBER

2873

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/914,082

Applicant(s)

JOEDICKE ET AL. *Je*

Examiner

Timothy J Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 12 and 13 is/are rejected.
- 7) ☒ Claim(s) 10, 11 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_

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**DETAILED ACTION*****Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allemand et al.(U.S. Patent No. 6,178,034) in view of Nishiyama et al.(U.S. Patent No. 4,761,061) and Groves(U.S. Patent No. 5,677,376).**

Regarding claim 1, Allemand et al. discloses an electrochromic element(col 3, lines 9-19) with an electrochromic arrangement(fig 2, the layer between substrates layers 10 and 15) enclosed between two plane substrates(fig 2, 10, 15), which has at least two electrode layers(fig 2, 20, 25), one electrochromic layer(fig 2, 30), one ion storage layer(fig 2, 50), and one polymer electrolyte layer(fig 2, 50 and col 10, lines 49-52) formed in situ(col 6, lines 33-36). Allemand et al. does not disclose a specific sealing member, or more specifically, where the polymer electrolyte layer adjoins a sealing element at the edge of the electrochromic element, wherein the sealing element has a plastically deformable liquid impermeable adhesive strip of a polyacrylate, arranged between the two plane substrates and adjoining directly the polymer electrolyte layer, as well as of a sealing strand adjacent thereto on the outside, having a gas

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impermeable sealant chemically compatible with the adhesive strip. However, Nishiyama et al. discloses the electrolyte layer adjoins a sealing element at the edge of the electrochromic element(fig 8, 2B), wherein an adhesive strip, arranged between the two plane substrates and adjoining directly the electrolyte layer, as well as of a sealing strand adjacent thereto on the outside(fig 8, 1 and col 9, lines 10-15, which discloses the sealing strand is made from a butyl rubber), having a gas impermeable sealant(col 10, line 62). It would have been obvious, to one skilled in the art, at the time of the invention to use an adhesive strip arranged between the two plane substrates and adjoining directly the electrolyte layer, as well as of a sealing strand adjacent thereto on the outside, having a gas impermeable sealant as shown by Nishiyama et al., in the electrochromic device of Allemand et al., since as shown by Nishiyama et al., using an adhesive strip arranged between the two plane substrates and adjoining directly the electrolyte layer, as well as of a sealing strand adjacent thereto on the outside a gas impermeable sealant is commonly done since using an adhesive strip in conjunction with a sealing strand provides an additional protection to the electrochromic material from the out side elements. Additionally, Allemand et al. does not disclose the sealing element has a plastically deformable liquid impermeable of a polyacrylate. However, Groves discloses a sealing element that has a plastically deformable liquid impermeable of a polyacrylate tape(table A, VHB-910). It would have been obvious, to one skilled in the art, at the time of the invention to use a sealing element made of a sealing element that has a plastically deformable liquid impermeable of a polyacrylate as

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shown by Groves, in the electrochromic device of Allemand et al., since as shown by Groves, a polyacrylate tape sealing element is commonly used with substrates since it provides a deformable seal (applicant's specification, third paragraph after the title "Summary Of The Invention" and fourth paragraph after the title "Description Of The Preferred Embodiment" which indicates the seal is VHB 910) adding to the durability of the electrochromic device when stress is applied to the device causing a deformation of the substrates. Regarding the sealing strand being chemically compatible with the adhesive strip. A modified Allemand et al. obviously uses a chemically compatible sealing strand and adhesive strip since they are made from respectively, a butyl rubber and polyacrylate tape, which is the materials the applicant's invention uses, and the applicant states that they are chemically compatible (third paragraph after the heading "Summary Of The Invention" and final page of the specification, second paragraph).

Regarding claim 2, a modified Allemand et al., as detailed in claim rejection 1 above discloses the adhesive strip is formed of a polyacrylate tape (see above rejection).

Regarding claim 3, a modified Allemand et al., as detailed in claim rejection 1 above, does not disclose the adhesive strip possesses a width of at least 5 mm. However, Nishiyama et al. discloses the adhesive strip possesses a width of at least 5 mm (col 16, line 22). It would have been obvious, to one skilled in the art, at the time of the invention, to use an adhesive strip with a width of at least 5 mm as shown by Nishiyama et al., in the electrochromic device of

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Allemand et al., since as shown by Nishiyama et al. an adhesive strip with a width of at least 5 mm will provide the proper sealing of the electrochromic device so as to protect the electrochromic, ion and electrolytic layers from foreign substances.

Regarding claim 4, a modified Allemand et al., as detailed in claim rejection 1 above, does not disclose the adhesive strip possesses a maximum width of 20 mm. However, Nishiyama et al. discloses the adhesive strip possesses a maximum width of 20 mm(col 16, line 22). It would have been obvious, to one skilled in the art, at the time of the invention to use an adhesive strip possesses a maximum width of 20 mm as shown by Nishiyama et al., in the electrochromic device of Allemand et al., since as shown by Nishiyama et al. an adhesive strip possesses a maximum width of 20 mm will provide the proper sealing of the electrochromic device so as to protect the electrochromic, ion and electrolytic layers from foreign substances.

Regarding claim 5, a modified Allemand et al., as detailed in claim rejection 1 above, discloses the adhesive strip has a polyacrylate with a maximum water content of 0.3 weight percent, preferably less than 0.05 weight percent(since the same material is used for an adhesive strip as the applicant's(polyacrylate tape, VHB-910) which therefore has the same properties).

Regarding claim 6, a modified Allemand et al., as detailed in claim rejection 2 above, discloses the adhesive strip comprises a polyacrylate with a glass transition temperature below 10 deg C(since the same material is used for

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an adhesive strip as the applicant's (polyacrylate tape, VHB-910) which therefore has the same properties).

Regarding claim 7, a modified Allemand et al., as detailed in claim rejection 1 above, discloses the sealing strand is a butyl rubber based butyl sealant (see claim rejection 1 above).

Regarding claim 8, a modified Allemand et al., as detailed in claim rejection 1 above, discloses the sealing strand possesses a specific conductivity of less than  $10^{-9} \text{ S/cm}$ , and a water vapor permeability according to DIN 53122-1.2 of less than  $0.5 \text{ g/m}^2$  (since the same material is used for the sealing strand as the applicant's (a butyl rubber) which therefore has the same properties).

Regarding claim 9, a modified Allemand et al., as detailed in claim rejection 1 above, does not disclose the sealing strand is made from an epoxy sealant. However, Nishiyama et al. discloses the sealing strand is made from an epoxy sealant (col 9, lines 10-20). It would have been obvious, to one skilled in the art, at the time of the invention to use the sealing strand is made from an epoxy sealant as shown by Nishiyama et al., in the electrochromic device of Allemand et al., since as shown by Nishiyama et al. an epoxy sealant will provide the proper sealing of the electrochromic device so as to protect the electrochromic, ion and electrolytic layers from foreign substances.

Regarding claim 13, a modified Allemand et al., as detailed in claim rejection 1 above, discloses the sealing strand possesses a specific conductivity of less than  $10^{-11} \text{ S/cm}$ , (since the same material is used for the sealing strand as the applicant's (a butyl rubber) which therefore has the same properties).

**Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Allemand et al.(U.S. Patent No. 6,178,034) in view of Nishiyama et al.(U.S. Patent No. 4,761,061) and Groves(U.S. Patent No. 5,677,376) as applied to claim 1 above, and further in view of Varaprasad et al.(U.S. Patent No. 6,420,036).**

Regarding claim 12, a modified a modified Allemand et al., as detailed in claim rejection 1 above, does not disclose a polymer electrolyte layer having at least one (meth)acrylic ester, at least one plasticizer and at least one polymerization initiator. However, Varaprasad et al. discloses a polymer electrolyte(col 3, lines 40- 41 and col 5, lines 2 and 3 since an electrolytic layer is disclosed and it is disclosed that the layers are polymers) layer having at least one (meth)acrylic ester(col 30, lines 33-35), at least one plasticizer(col 4, line10) and at least one polymerization initiator(col 97, lines 60-66, note that the initiator causes a copolymerization of the compounds thus it is a polymerization initiator) stating that "the resulting polychromic solid films posses beneficial properties and characteristics, and offer superior results"(col 3, lines 43-46). It would have been obvious, to one skilled in the art, at the time of the invention to use a polymer electrolyte layer having at least one (meth)acrylic ester, at least one plasticizer and at least one polymerization initiator as shown by Varaprasad et al., in the electrochromic device of a modified Allemand et al., since as shown by Varaprasad et al. a polymer electrolyte layer having at least one (meth)acrylic ester, at least one plasticizer and at least one polymerization initiator is



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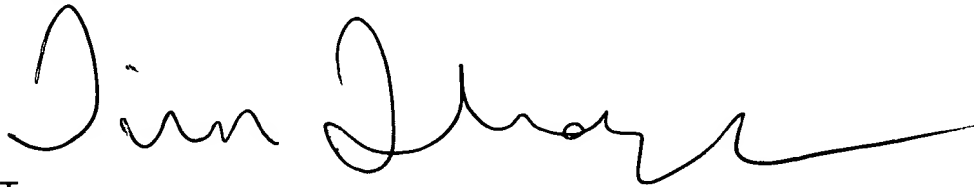
commonly used for forming an polymer electrolyte since it produces a superior product to conventional electrochromic devices .

***Allowable Subject Matter***

Claims 10, 11 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. With the important features being; the specific conductivity of the epoxy sealant; or a further sealant strand with a polysulfide base.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Thompson whose telephone number is (703) 305-0881. If the examiner can not be reached his supervisor, Georgia Epps, can be reached on (703) 308-4883.

A handwritten signature in black ink, appearing to read "Tim J. Thompson", with a long horizontal flourish extending to the right.

T.J.T.

5/6/03